FIRE SPRINKLER NOTES:

1. THIS AUTOMATIC SPRINKLER SYSTEM DESIGN IS CONCEPTUAL AND IS SUBMITTED AS A BASIS FOR BIDDING. A MINIMUM OF SIX (6) SETS OF COMPLETE WORKING PLANS (SHOP DRAWINGS), HYDRAULIC CALCULATIONS AND MANUFACTURERS DATA, PREPARED IN ACCORDANCE WITH NFPA 13 SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER, AND HAWAII INSURANCE RATING BUREAU FOR APPROVAL BEFORE INSTALLATION. THREE (3) SETS OF COMPLETE WORKING PLANS AND HYDRAULIC CALCULATIONS, REVIEWED AND STAMPED BY A MECHANICAL ENGINEER LICENSED IN THE STATE OF HAWAII SHALL BE SUBMITTED TO THE FIRE AND BUILDING DEPARTMENTS FOR APPROVAL BEFORE INSTALLATION.
2. THE SPRINKLER SYSTEM DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13-2010. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL SPRINKLER SYSTEM COMPONENTS AND COORDINATE WITH THE VARIOUS TRADES.
3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL SPRINKLER COMPONENTS RELATIVE TO PARTITIONS, LIGHT FIXTURES, MECHANICAL DUCT WORK, AND COORDINATE WITH VARIOUS TRADES.
4. ALL DEVICES AND EQUIPMENT SHALL BE UL LISTED OR FM APPROVED.
5. AUTOMATIC WET PIPE SPRINKLER PROTECTION SHALL BE PROVIDED THROUGHOUT THE ENTIRE BUILDING INCLUDING COMBUSTIBLE EAVES AND ATTIC.
6. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED IN ACCORDANCE WITH NFPA 13. SPRINKLER SYSTEM DESIGN CRITERIA SHALL BE AS FOLLOWS:

OCCUPANCY CLASSIFICATION:	ORDINARY HAZARD
DESIGN METHOD:	AREA DENSITY
DESIGN DENSITY:	0.15 GPM/SF
DESIGN AREA:	1,500 SF
HOSE STREAM:	100 GPM

7. WATER SUPPLY INFORMATION: THEORETICAL CALCULATIONS

   RESIDUAL PRESSURE AVAILABLE @ 759 GPM : 65 PSI
   RESIDUAL PRESSURE AVAILABLE @ 1760 GPM : 20 PSI

8. ALL SPRINKLERS SHALL BE UL LISTED AS FOLLOWS:

QUICK RESPONSE PENDENT	CENTRAL, VIKING, STAR, WHITE FINISH WITH RECESSED ESCUTCHEON OR EQUAL.
QUICK RESPONSE UPRIGHT	CENTRAL, VIKING, STAR OR EQUAL.
QUICK RESPONSE SIDEWALL	CENTRAL, VIKING, STAR, WHITE FINISH WITH RECESSED ESCUTCHEON OR EQUAL.

   NOTE: ALL SPRINKLERS SHALL BE A QUICK RESPONSE, ORDINARY TEMPERATURE UNLESS NOTED OTHERWISE. PROVIDE INTERMEDIATE TEMPERATURE SPRINKLERS IN THE ELEVATOR MACHINE ROOM, ELEVATOR SHAFT, AND ATTIC SPACE.

9. SPRINKLER PIPING SHALL COMPLY WITH NFPA 13, EXCEPT THAT PLASTIC PIPE OR COPPER TUBING WILL NOT BE PERMITTED. ALL PIPING SHALL BE BLACK STEEL AND BLACK STEEL LESS THAN 2-1/2 INCHES SHALL BE SCHEDULE 40.
10. PIPING SHALL BE PROVIDED WITH EARTHQUAKE PROTECTION IN ACCORDANCE WITH NFPA 13, ZONE 4.
11. PROVIDE INSPECTION, FLUSHING AND HYDROSTATIC TESTS IN ACCORDANCE WITH NFPA 13.
12. PROVIDE SPARE SPRINKLERS, WRENCH AND CABINET IN ACCORDANCE WITH NFPA 13.
13. THIS AUTOMATIC SPRINKLER SYSTEM SHALL BE SUPERVISED BY AN APPROVED CENTRAL, PROPRIETARY OR REMOTE STATION SERVICE OR A LOCAL ALARM WHICH WILL GIVE AN AUDIBLE SIGNAL AT A CONSTANTLY ATTENDED LOCATION. THE SYSTEM SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM WHICH WILL BE MONITORED.
14. PROVIDE LOCKS ON ALL CONTROL VALVES TO PREVENT TAMPERING.
15. ALL EXPOSED SPRINKLER PIPING AND ACCESSORIES SHALL BE PAINTED TO MATCH ADJACENT SURFACES. SPRINKLER HEADS SHALL NOT BE PAINTED.
16. ALL PIPING IN CORRIDORS SHALL BE CONCEALED BY SOFFITS. ALL PIPING IN COMMON ROOMS SHALL FOLLOW CEILING SLOPES AND WALL SURFACES.
17. ALL EXPOSED SPRINKLERS SHALL BE PROVIDED WITH HEAVY DUTY SPRINKLER GUARDS. 1

FIRE SPRINKLER SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
F	FIRE SPRINKLER PIPE
D	DRAIN PIPE
	OS & Y VALVE
	GATE VALVE
	CHECK VALVE
FDC	FIRE DEPARTMENT CONNECTION
UP/DN	UP/DOWN
TS	VALVE TAMPER SWITCH
DIP	DUCTILE IRON PIPE, CLASS 521
FCV	FLOOR CONTROL VALVE
ZCV	ZONE CONTROL VALVE
WF	WATER FLOW SWITCH
PS	ALARM PRESSURE SWITCH
SV	SOLENOID FLOW CONTROL VALVE
	WET PIPE SPRINKLER RISER
	PENDENT SPRINKLER
	UPRIGHT SPRINKLER
	SIDE WALL SPRINKLER
H	HEAT DETECTOR, 200 °F, CEILING MOUNTED
R	ELEVATOR POWER SHUTDOWN
	FIRE SPRINKLER CONTROL PANEL

MAXIMUM BRACING LENGTHS

(ITEM 1)	MAXIMUM LENGTH, L (2)
∠ 1"x1"	3'-3"
∠ 1"x 1 1/4"	3'-11"
∠ 1"x1 1/2"	4'-10"
∠ 1"x1 3/4"	5'-8"
∠ 2"x2"	6'-5"
∠ 2 1/2" x2 1/2"	7'-5"
∠ 3"x3"	9'-8"
∠ 3 1/2"x3 1/2"	11'-4"
3/8"ø ROD	1'-7"
1/2"ø ROD	2'-1"
5/8"ø ROD	2'-7"
3/4"ø ROD	3'-1"
7/8"ø ROD	3'-7"

TABLE 1

NOTES:
1. REFERS TO ANGLES WHERE THE MAXIMUM LENGTH IS RELATIVELY INDEPENDENT OF THICKNESS I.E. MAX. LENGHT SHOWN FOR A 1"x1" ANGLE IS GOOD FOR ANGLES 1/4 & 3/8 THICK, ETC.

2. MAXIMUM LENGHT, L BASED ON L = 200r:
   LEAST RADIUS OF GYRATION = r.

SEISMIC PIPING SUPPORT SIZES & SPAN INTERVALS

PIPE I.D. MM (SEE NOTES)	BOLT TO ANGLE OR ROD	TRANSVERSE, LONGITUDINAL, AND VERTICAL ANGLES	ROD DIA.	MAXIMUM SPAN INTERVALS BETWEEN TRANSVERSE SWAY BRACING (MM)	
				STEEL PIPING	ALL OTHER (5) PIPING MATERIAL
2 1/2"	3/8"	2"x2"x3/8"	1/2"ø	1/2"	16'-9"
3 1/8")	3/8"	2"x2"x3/8"	1/2"ø	1/2"	21'-3"
3 1/2"	3/8"	2"x2"x3/8"	1/2"ø	1/2"	22'-6"
4"	1/2"	2"x2"x3/8"	5/8"ø	5/8"	24'-9"
5"	1/2"	2"x2"x3/8"	5/8"ø	5/8"	25'-0"
6"	1/2"	2"x2"x3/8"	3/4"ø	3/4"	27'-6"
8"	5/8"	2 1/2"x2 1/2"x1/2"	3/4"ø	3/4"	32'-6"
10"	7/8"	2 1/2"x2 1/2"x1/2"	–	7/8"	35'-0"
12"	1"	3 1/2"x3 1/2"x1/2"	–	7/8"	38'-9"

TABLE 2

NOTES:
1. MAXIMUM SPAN INTERVALS ARE BASED ON PIPE WEIGHT WITH NO ATTACHMENTS. IF THE WEIGHT OF THE ATTACHMENTS ON A SPAN IS GREATER THAN 10% OF THE PIPE SPAN WEIGHT, ATTACHMENTS SHALL BE LATERALLY BRACED SEPARATELY.
2. FLEXIBLE CONNECTORS SHALL BE USED AS REQUIRED.
3. LONGITUDINAL BRACE INTERVAL SHALL BE MAXIMUM 40'.
4. SWAY BRACE REFERS TO TRANSVERSE OR LONGITUDINAL SUPPORTS.

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MARK	DATE	DESCRIPTION
1	2014-04-10	ADDENDUM NO. 3

REVIEWED: DEPARTMENT OF PARKS AND RECREATION DATE

COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION
101 PAUAHI STREET, SUITE 6 / HILO, HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.8411

PAHOA PARK MASTER PLAN
PHASE I - BID SUBMITTAL 2014-02-10

JOB NO.: PR-4234 PAHOA, PUNA, HAWAII TMK: (3) 1-5-002:020

PLAN SHEET DESCRIPTION: FIRE SPRINKLER NOTES, SYMBOLS AND BRACING

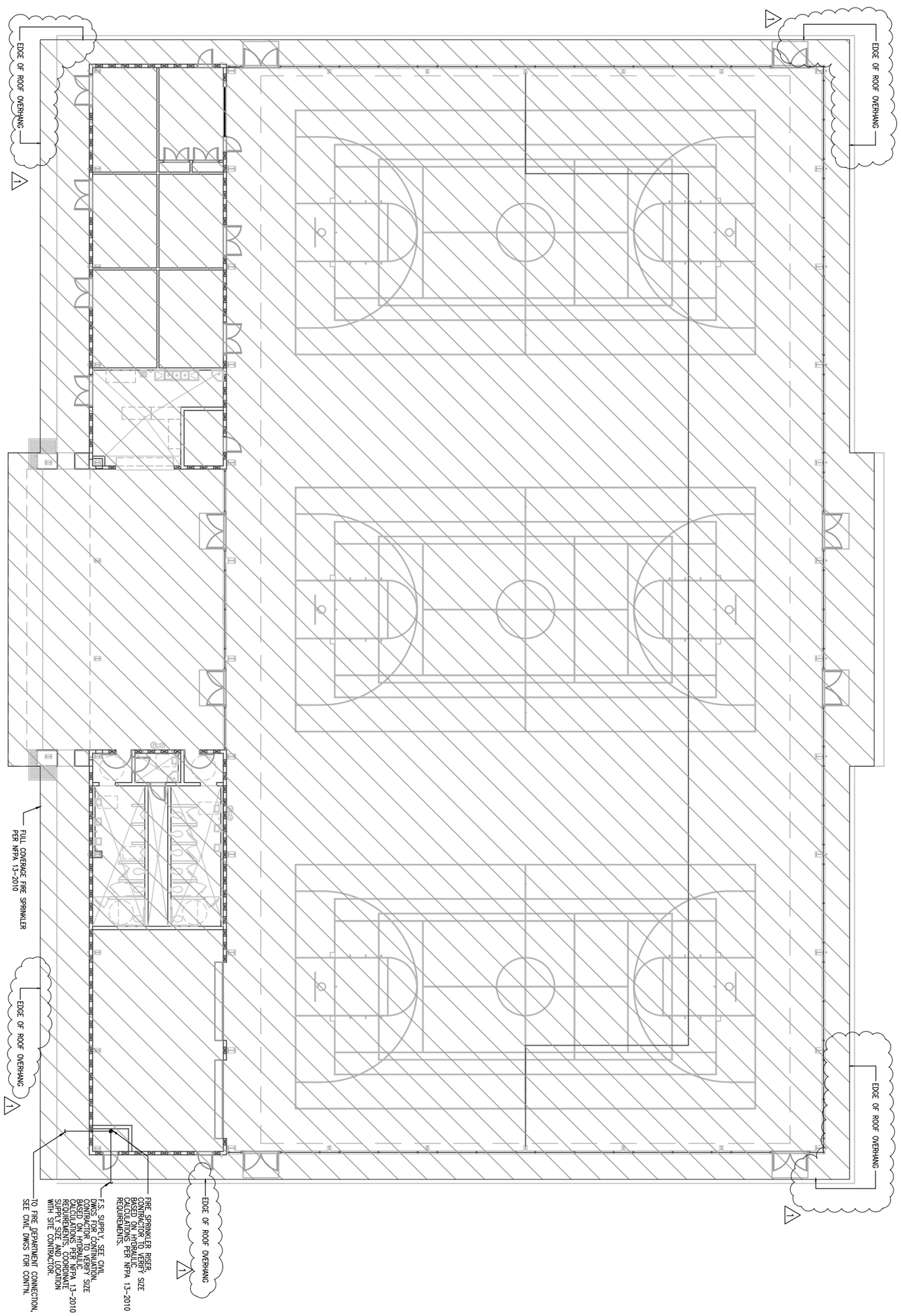
DESIGNED BY: MS
DRAWN BY: MS
CHECKED BY: NYT

SHEET NO. FS-G001

OF SHEETS

DATE: 2014-02-10

A-1 FIRE SPRINKLER PLAN - PLAYCOURT
SCALE: 3/32" = 1'-0"



DESIGNED BY:	MS
DRAWN BY:	MS
CHECKED BY:	NYT
SHEET NO.	FS-PC101
OF SHEETS	
DATE:	2014-02-10

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PHASE I - BID SUBMITTAL 2014-02-10

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PLAN SHEET DESCRIPTION: FIRE SPRINKLER PLAN - PLAYCOURT

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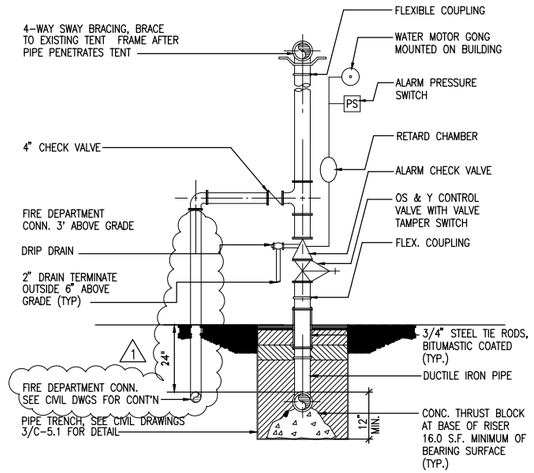
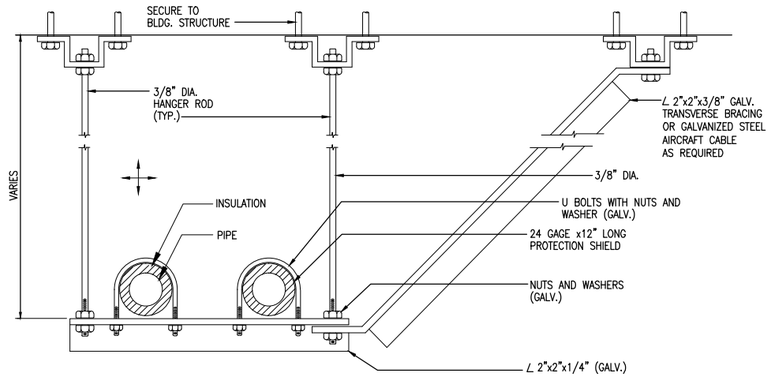
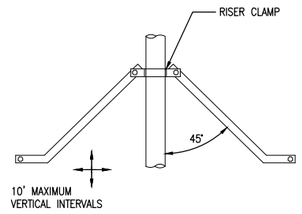


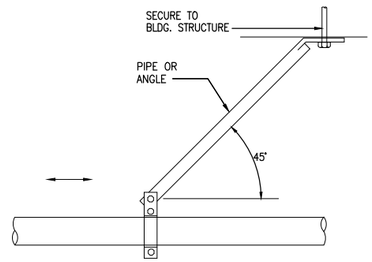
1 – SPRINKLER RISER DETAIL
SCALE: NTS



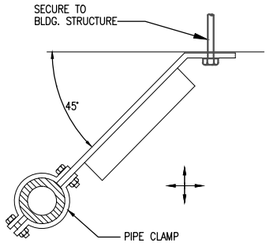
2 – (MULTI-PIPES) SEISMIC PIPE SUPPORT
SCALE: NTS



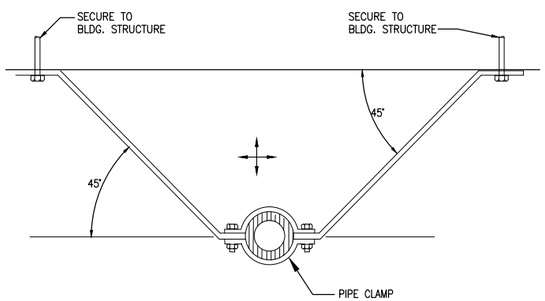
3 – VERTICAL BRACING DETAIL
SCALE: NTS



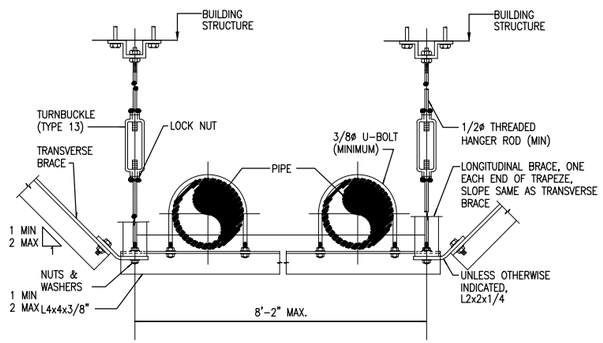
4 – LONGITUDINAL BRACING DETAIL
SCALE: NTS



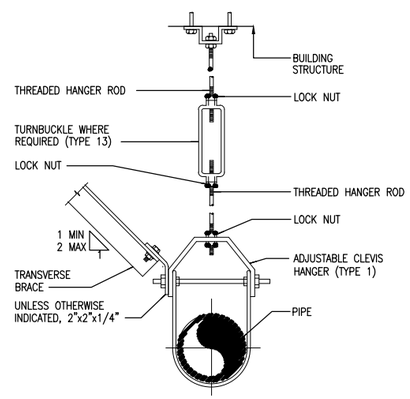
5 – TRANSVERSE BRACING DETAIL
SCALE: NTS



6 – TRANSVERSE BRACING DETAIL
SCALE: NTS



7 – TRAPEZE TYPE HANGER DETAIL
SCALE: NTS



8 – PIPE HANGER DETAIL
SCALE: NTS

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JOB NO.: PR-4234

PAHOA, PUNA, HAWAII

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